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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,707	11/25/2003	Jeffrey G. Thompson	7784-000676	6306
27572	7590	11/16/2005		
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 828 BLOOMFIELD HILLS, MI 48303			EXAMINER GABOR, OTILIA	
			ART UNIT	PAPER NUMBER
			2884	
DATE MAILED: 11/16/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/721,707	THOMPSON, JEFFREY G.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Otilia Gabor	2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                                       |                                                                                         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                           | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/25/03, 02/16/05</u> | 6) <input type="checkbox"/> Other: _____                                                |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 2-5, 15, 17-19, 25-28, 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. The term "cold signature" in claims 2, 17, 25, 32 is a relative term which renders the claim indefinite. The term is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.
4. Claim 15 recites the limitation "the liquid couplant" in line 1. There is insufficient antecedent basis for this limitation in the claim.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 2, 4-7, 9-17, 19-24, 29-32, 34, 35 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Novotny (U. S. Patent 6,847,907).

Novotny discloses an apparatus and method for detecting defects in a test Specimen (composite structure), the method comprising: applying a liquid couplant applied on the specimen under inspection; acoustically exciting the liquid couplant; monitoring the liquid couplant for vibration effects which includes a standing wave of liquid couplant and which indicates the defects in the specimen (see Col.15, line 40-Col.16, line 45). The method further includes the step of thermally monitoring the specimen by acquiring infrared images of the couplant, as well as visually monitoring the specimen to acquire real-time images of the couplant to the inspector. Novotny also discloses that water is usually used as the liquid coupler. The acoustic exciter coupled to the specimen excites the test specimen to cause the liquid coupler to produce a wave that is characteristic of the defect (defect signature), which signature is detected by a transducer. The infrared images are acquired using a camera which displays the images of the defect signatures to the inspector (see Figs. 1-9 and corresponding descriptions). Novotny discloses that the acquiring of the image is done by acquiring an image before and after the excitation and comparing the two images to detect the defects in the specimen.

7. Claims 1, 2, 4-7, 9-17, 19-35 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Rothenfusser (DE 10147102 A1).

Rothenfusser discloses an apparatus and method for detecting defects in a

specimen (B) by: applying a liquid detection medium (A) to the test specimen (B); exciting the test specimen (B) to cause the liquid detection medium (A) to produce a defect signature (SW, AB) for a defect in the test specimen; monitoring the liquid detection medium (A) for defect signatures (SW, AB) produced by the liquid detection medium (A) (the wave amplitudes of the object and the liquid detection medium allow the identification of a certain structure or signature, and the standing wave indicates a portion with structural defects) (see figures and corresponding description). The monitoring is done with a camera (K), which detects different heat emission intensities.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3, 8, 18, 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Novotny or Rothenfusser.

Neither Novotny nor Rothenfusser disclose that the test specimen is excited so that the liquid in the liquid couplant is ejected from the surface of the specimen, however it would have been obvious to one of ordinary skill in the art that both systems are capable of such an ejection since it is well known that with a sufficient excitation power, the standing wave generated creates a large amplitude signature so that at least some of the liquid is ejected (i.e., liquid ejection occurs at sufficient excitation).


**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Otilia Gabor whose telephone number is 571-272-2435. The examiner can normally be reached on Monday-Friday between 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Otilia Gabor  
Primary Examiner  
Art Unit 2884

  
**OTILIA GABOR**  
**PRIMARY EXAMINER**